

## *Adventures in Wasteland*

*The Newsletter of the National Association  
of Remedial Project Managers  
(NARPM)*

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### *Editor's Notes*

This issue of the NARPM newsletter contains the following articles:

- *Superfund Redevelopment Activities*
- *ERAF - What and Who We Are and How We Can Assist You*
- *Unique Community Outreach at Torch Lake Superfund Site, Houghton County, MI*
- *Impermeable Cap Fabrication and Installation*
- *Compost-Free Bioreactors*
- *45-Day Task Force on the Use of Science in Regional Decision Making Issues Final Report (July 28, 2003)*
- *NL Industries Settlements Net \$40,000,000*
- *Las Vegas Technical Support Website Updated*
- *Former Lead Smelter Cleanup Complete--Cleveland Lumber Company to Reuse Industrial Flats Site*
- *US EPA SITE Program Description*

There is a *Co-Chairs' Corner*. Note that this says that the Agency wants feedback from RPMs on the recommendations in the National Advisory Council on Environmental Policy and Technology (NACEPT) draft report. Their report is scheduled to be issued within a few months. This NACEPT Superfund subcommittee is an advisory panel that was formed to make recommendations on the future role of the Superfund. It was asked to have a public dialogue and reach consensus-based recommendations on three major issues: 1) the role of the National Priorities List; 2) the role of Superfund at so called "mega sites"; and 3) measuring program performance. The panel discussed these three points and, I believe, restated them but I was not able to find the final version. This is your opportunity to have some input on the future of Superfund.

This issue also contains the following miscellaneous items:

- *Human Health Toxicity Values in Superfund Risk Assessments*
- *Tetrachloroethylene Cancer Toxicity*
- *Trichloroethylene Health Risk Assessment: Synthesis and Characterization*
- *Technical and Regulatory Guidance for Design, Installation, and Monitoring of Alternative Final Landfill Covers*
- *Treatment Standards for Mercury-Containing Debris Memo*
- *National Emission Standards for Hazardous Air Pollutants (NESHAP) From Site Remediations*
- *Changes to Cleanup Plan for New Bedford Harbor*
- *Groundwater Evaluation and Optimization System*
- *Technical Support Project Fall 2003 Meeting*
- *Groundwater Sampling*
- *"Evapotranspiration Landfill Cover Systems Fact Sheet"*
- *Identifying Mystery Pollutants*
- *Interstate Technology & Regulatory Council*
- *Superfund Response Actions: Temporary Relocations Implementation Guidance*
- *CERCLA Municipal Solid Waste Exemption Guidance*
- *Dynamic Field Activities*
- *"Managing Uncertainty and Systematic Planning for Environmental Decision Making"*
- *Uniform Environmental Covenants Act*

- **40 High-Priority Superfund Sites Cleaned Up**
- **Identity Theft**

There are also some news items from regions 1, 9, and 5.

Reportedly, the reorganization for the Office of Superfund Remediation and Technology Innovation (OSRTI) has been approved. So soon you will be dealing with divisions and branches rather than centers.

Note that the Co-Chairs' Corner also reminds everyone that there are some due dates fast approaching for suggestions for the 2004 NARPM conference to be held from May 24 through 28, 2004 in Miami Beach, Florida. It is not too early to make your plans to attend. These conferences are very worthwhile. You not only have an opportunity to learn what the latest is that is going on with the Superfund program but you get to interact with your fellow RPMs from around the country. And the Corner reports on the Co-Chairs' meetings with Headquarters personnel.

Check out the NARPM Intranet site at <http://intranet.epa.gov/oerrinet/wkgps/narpm/>. It is undergoing an updating.

As always I need your input for the newsletter. Anytime you have something that may be of interest to other RPMs, just send it to me.

Bernard J. Schorle, December 18, 2003

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### ***Superfund Redevelopment Activities***

Over the past few months, the Regions have been very busy supporting new initiatives in the Superfund Redevelopment Program, including reviewing the Ready for Reuse Determination (RfR) Guidance, awarding the first two Superfund RfRs in Texas and Illinois, and developing Government Performance and Results Act (GPRA) Performance Measures. The Regional Superfund Redevelopment Coordinators met in Washington, DC on November 18 to discuss how to further support Regional staff in the redevelopment process. The following provides more information on each of these activities.

Ready for Reuse Determination (RfR) Guidance Review by Regions - On July 23, 2003, Office of Superfund Remediation and Technology Innovation Director Mike Cook asked Superfund Program Managers in the Regions to review the draft guidance entitled "Guidance for Preparing Superfund Ready for Reuse Determinations," which provides information on how to prepare and issue RfRs at Superfund sites. An RfR is an environmental status report that documents a technical determination by EPA, in consultation with States, Tribes, and local governments, that all or a portion of a real estate property can support specified uses and remain protective of human health and the environment. Discussions with the lending and insurance industries indicate that this information, with documentation of the decision attached and signed by EPA, would help the marketability of properties at Superfund sites. All ten Regions commented and the final guidance is expected to be issued in December.

EPA and Texas Declare Portion of Tex Tin Site Ready for Reuse - On July 1, 2003, during a signing ceremony in Texas City, Texas, EPA Region 6 and the State of Texas awarded the first Superfund RfR in the nation for Operable Unit (OU) 2 of the Tex Tin Superfund site. The RfR documents EPA's technical determination that the cleanup of OU 2 will remain protective of human health and the environment and that this portion of the Tex Tin site is ready for industrial reuse. The Tex Tin property is the site of a former tin and copper smelter that was constructed as an emergency tin supply plant during World War II. It was operated and modified by a succession of companies until it closed in 1991. Over the years, industrial waste releases contaminated the entire 170-acre property. BP Amoco, the current owner, conducted the cleanup of OU 2 under the Texas Voluntary Cleanup Program as a result of a Memorandum of Understanding (MOU) between EPA and the state. The RfR was signed by Texas City Mayor Carlos Garza,

EPA Region 6 Administrator Richard Green, and Texas Commission on Environmental Quality (TCEQ) Commissioner Kathleen Hartnett White. Mayor Greene said, "Today's Ready for Reuse determination clears the way for redevelopment of this prime commercial real estate." Visit <http://www.epa.gov/superfund/programs/recycle/reuse/index.htm> for more detailed information on the Tex Tin RfR or, if you would like more information on the Tex Tin site, contact Carlos Sanchez at [sanchez.carlos@epa.gov](mailto:sanchez.carlos@epa.gov) or 214-665-8507.

EPA Region 5 Declares H.O.D. Landfill Ready for Recreational Reuse - The H.O.D. Landfill site in Antioch, IL, a Superfund Redevelopment pilot, is the first Superfund site in the Midwest to be presented with an RfR. William Muno, the Region 5 Superfund Division Director, signed the RfR on November 12, 2003. The H.O.D. Landfill site contains a 51-acre municipal and industrial landfill which operated from 1963 to 1984. About 30 acres of the cleaned-up and grass-covered H.O.D. Landfill is being converted to multiple athletic fields adjacent to Antioch Community High School. Methane gas extracted from the landfill is now being used to produce heat and electricity for the school. A wetland along one side of the site will be used for school science projects. Thomas Skinner, the Region 5 Administrator, praised the reuse of the site, stating, "To look at a garbage dump and see soccer and softball fields took tremendous foresight and creativity. The many partners in this project have created something positive from what used to be a big negative for the community." EPA worked with these partners to enable the reuse of the site by revising the risk assessment and writing an Explanation of Significant Differences (ESD) to remove aspects of the remedy that were unnecessarily impeding the reuse of the property. Please contact Thomas Bloom at [bloom.thomas@epa.gov](mailto:bloom.thomas@epa.gov) for more information on the H.O.D. Landfill site.

EPA Developing Reuse Performance Measures for FY04 - Over the past year, a workgroup of Headquarters and Regional representatives developed two GPRA performance measures to track and report the Agency's accomplishments in making sites ready for reuse. The two reuse performance measures, which become effective in FY2004, are: (1) the number of sites (or portions of sites) that are ready for reuse; and (2) the number of acres of land at sites that are ready for reuse. The land at a Superfund site is considered ready for reuse if it is either already in reuse or if EPA determines that it is protective for reuse. There are two ways a site may be considered protective for reuse. The first is when EPA determines that Superfund response actions are unnecessary for a site or portion of a site (e.g., as a result of an investigation of the property) and the Agency is not currently aware of other EPA or State cleanup program restrictions on land use. The second is when the cleanup goals established for the site or portion of the site have been attained (i.e., the engineering controls for the land component have been implemented and are operating as intended). EPA will track and report on these performance measures at Federal facility and non-Federal facility National Priority List (NPL) sites and Superfund alternative sites in which remedial actions or non-time critical removal actions have been taken. EPA is developing screens in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) for Regions to report their accomplishments and will be issuing detailed guidance on the performance measures during the next several months. For more information, contact Janet Weiner at 703-603-8713 or [weiner.janet@epa.gov](mailto:weiner.janet@epa.gov).

Workshop for Superfund Reuse Coordinators - On November 18, 2003, EPA's Regional Superfund Reuse Coordinators met with Headquarters staff in Washington, D.C. for a workshop to share reuse experiences and identify available resources for site redevelopment. The Superfund Redevelopment Headquarters team recognizes that these coordinators play an increasingly important role in helping EPA Regional staff, communities, and traditional Superfund stakeholders work through site reuse considerations, build effective partnerships, and overcome obstacles to site reuse. If you have questions about Superfund site reuse, please contact the Superfund Reuse Coordinator in your Region or Melissa Friedland at [Friedland.Melissa@epa.gov](mailto:Friedland.Melissa@epa.gov) or 703-603-8864. The Regional Superfund Redevelopment coordinators are:

Region 1 - John Podgurski, 617-918-1296, email: podgurski.john@epa.gov  
Region 2 - Dan Forger, 212-637-4402, email: forger.dan@epa.gov  
Region 3 - Bonnie Gross, 215-814-3229, email: gross.bonnie@epa.gov  
Region 4 - Bill Denman, 404-562-8939, denman.bill@epa.gov  
Region 4 - Derek Matory, 404-562-8800, matory.derek@epa.gov  
Region 5 - Tom Bloom, 312-886-1967, email: bloom.tom@epa.gov  
Region 6 - Diana Hinds, 214-665-7561, email: hinds.diana@epa.gov  
Region 7 - Bob Feild, 913-551-7697, email: feild.robert@epa.gov  
Region 8 - Victor Ketellapper, 303-312-6578, email: ketellapper.victor@epa.gov  
Region 9 - Jim Hanson, 415-972-3188, email: hanson.jim@epa.gov  
Region 10 - Peter Contreras, 206-553-6708, contreras.peter@epa.gov

The Video *Superfund Redevelopment: Realizing Possibilities Is A Hit* - In late 2002, the Headquarters Superfund Redevelopment team produced a 13-minute video illustrating how communities, in cooperation with EPA and other stakeholders, can reuse a Superfund site. The video highlights the Industri-Plex site in Woburn, MA. In the months since the video debuted at the Brownfields 2002 Conference, it has been shown at several conferences by the team and by Steve Luftig to promote the Land Revitalization Agenda. The video has been hugely successful and the team continues to get requests for copies. If you have not seen the video, go to the Videos page on the Technology Innovation Program's Clu-In Web site at <http://clu-in.org/studio/video.cfm>. If you would like copies of the video, contact Bob Cattell at [cattell.robert@epa.gov](mailto:cattell.robert@epa.gov) or 703-603-9054.

[Editor's note. This article was furnished by Rhonda Jackson of MNG Center for Environmental Strategies and Technology, SRA International.

Woburn is also where the Wells G & H Superfund site, the subject of the book *A Civil Action* by Jonathan Harr (Random House, 1995, and Vintage Books, 1996) and the movie of the same name, is located. The Anderson Regional Transportation Center built on the Industri-Plex site is named after Jimmy Anderson, one of the children who died of leukemia that was blamed on the contamination at the Wells G & H site, in order to honor the children who died similarly.

The video *Superfund Redevelopment: Realizing Possibilities* can be viewed even on a USEPA computer using Windows Media Player; I have Windows XP here in region 5. However, when using the "broadband connection", the viewing was periodically interrupted when buffering was needed. When using the "dial-up connection", the picture did not appear to me to be as clear as it was with the other connection. I do recommend the video.]

December 5, 2003

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### ***ERAF - What and Who We Are and How We Can Assist You***

Provided by Gina Ferreira, Region 2

ERAF is the Ecological Risk Assessment Forum, a national group providing technical assistance for Office of Solid Waste and Emergency Response (OSWER) ecological risk assessments. The ERAF provides Superfund and RCRA risk managers with information needed to make and communicate transparent risk-based decisions through the promotion of scientifically defensible and nationally consistent methods for conducting ecological risk assessments (ERAs).

The group consists of EPA employees with an interest in OSWER ecological risk assessment issues (e.g., regional ecological risk assessors, Biological Technical Assistance Group (BTAG) coordinators, and representatives from the Office of Superfund Remediation and Technology Innovation (OSRTI) (formerly the Office of Emergency and Remedial Response (OERR)), Office of Solid Waste (OSW), and Office of Research and Development (ORD)). Leadership of

the ERAF consists of three Co-chairs, two of which are from regional offices and one of which is from Headquarters. As of May 2003, the tri-chairs are:

Susan Roddy of Region 6 (214) 665-8518  
Gina Ferreira of Region 2 (212) 637-3768  
Dale Matey of OSWER (202) 566-1932

Most EPA regions have Biological Technical Assistance Groups (BTAGs), which consist of a group of regional scientists that advise and assist site managers with ecological studies produced in conjunction with remedial investigations and feasibility studies (RI/FSS) and removal actions at Superfund sites. The BTAG serves an advisory role; it functions to assist site managers with the collection and evaluation of information needed to assess ecological effects at Superfund sites. The BTAGs (some regions use different names for their groups) are headed by regional scientists known as Coordinators. The regional BTAG Coordinators include:

Region 1: Cornell Rosiu, Rick Sugatt, and Bart Hoskins	Region 6: Susan Roddy and Jon Rauscher
Region 2: Mindy Pensak	Region 7: Venessa Madden
Region 3: Bruce Pluta	Region 8: Dale Hoff
Region 4: Sharon Thoms	Region 9: Ned Black
Region 5: David Brauner and James Chapman	Region 10: Joe Goulet

Remedial project managers should contact their regional BTAG Coordinator for assistance with both general and site-specific ecological risk assessment issues. If warranted, risk assessment questions or issues may be elevated to the tri-chairs for response or may be forwarded by them to the Ecological Risk Assessment Support Center (ERASC) of ORD.

ERAF staff are currently responsible for producing *ECO Update*, a bulletin series on ecological assessment at Superfund sites and RCRA facilities that serves as a supplement to already existing ecological risk assessment guidance. Past issues of *ECO Update* can be found at the website [www.epa.gov/superfund/programs/risk/ecoup/index.htm](http://www.epa.gov/superfund/programs/risk/ecoup/index.htm). Recent and future issues of *ECO Update* and ERAF work products that may be of use to Superfund remedial project managers include:

The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments, USEPA, June 2001, EPA/540/F-01/014

Ecological Risk Assessment at Superfund Sites and RCRA Corrective Action Facilities (This is currently awaiting final edit and Headquarters finalization)

Guidance for Monitoring at Hazardous Waste Sites: Framework for Monitoring Plan Development and Implementation (undergoing One Program final approval)

Currently, the ERAF is working on several guidance documents and products applicable to ecological risk assessment issues at Superfund sites including groundwater/surface water interaction evaluation, a generic Statement of Work for ERAs, development of ecological clean-up levels, and ecological toxicological profiles. Several ERAF members are on a workgroup that is developing an OSWER Risk Assessment Website which will have a link to an ERAF webpage.

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### ***Unique Community Outreach at Torch Lake Superfund Site, Houghton County, MI***

**Brenda R. Jones, RPM, Region 5**

During the week of August 18-22, 2003, Torch Lake RPM Brenda Jones performed what may be a first for Superfund Sites. Brenda trained four local high school biology/natural science teachers to perform long term biological monitoring for the post-remedial portions of the Torch Lake Superfund Site. The site is located in Houghton County, in the Keweenaw Peninsula of the Upper Peninsula of Michigan.

The remedy for this copper mining site is to cover the mine spoils (e.g., slag and stamp sands) with 6-10 inches of clean soil and to vegetate the cover with six plant species (legumes and other fast growing plants). Work on the remedy began in 1999 and is approximately 85% complete to date. The purpose of the remedy is to keep mining wastes from blowing into the aquatic systems, thereby allowing the sediments to recover naturally over time. The emphasis of the remedy was always protection of aquatic resources without an evaluation of the impacts to the terrestrial habitats.

The stamp sands, prior to the remedy, were barren areas, devoid of vegetation, appearing almost as moonscapes. The 11 treated stamp sands/slag piles are located around the Keweenaw Peninsula and vary in size from less than 100 acres to approximately 230 acres. So the question arose, "What impact is the remedy having on terrestrial habitats?"

This training session was an outgrowth of work performed in late summer 2002 to address that question. That is, in 2002, Brenda, along with biologists from the Environmental Response Team and U.S. Fish and Wildlife Service (FWS), performed surveys of the bird, small mammal, and plant communities along with an evaluation of soil fertility in five different areas. These surveys were performed on areas that had been remedied three years, two years, and one year prior to the survey. Additionally, "time zero" sites (unremediated stamp sand areas) were also surveyed for the same parameters. This allowed for a comparison of the impact of the remedy over time and for a comparison of the conditions at the time of the survey to a baseline (time zero) condition.

The survey results showed much greater diversity and biomass of plant species (we found 76 species where we had planted only 6) than we expected on the remediated sites versus finding only five species on the time zero sites. We found small mammals using the newly remedied areas where we found none using the "time zero" areas, and we found much greater soil fertility in the remediated areas as well.

Upon reviewing the results it became apparent that it would be good for the Agency if this terrestrial monitoring continued over time (long-term monitoring is ongoing for the aquatic habitats). Following up on a lead from a local citizen, Brenda contacted the Western Upper Peninsula Center for Science, Mathematics and Environmental Education, located at Michigan Technological University, a local school. The Center offers a wide variety of programs focused on enhancing the teaching and learning of science and mathematics in the twenty-one school districts of the five western counties of Michigan's Upper Peninsula.

Through coordination with the Center, Brenda arranged to train four local high school teachers in how to continue the project, looking only at the bird, plant, and soil fertility surveys. EPA chose not to continue the small mammal surveys since these types of surveys require checking traps several times during the day and night (to ensure that the animals remain alive). This would be too much work for the students and teachers to perform. Additionally, there were health and safety concerns due to potential diseases that small mammals may carry.

The teachers, once trained, worked this project into their curriculum immediately upon the start of classes in the fall and trained their students to perform the surveys. The teachers incorporated this project into their math, biology, integrated science, and chemistry courses. The teachers and students were out in the field collecting data the week of September 8-12, 2003. The teachers have committed to performing the study each fall for the next four years. Since there were four different high schools, each school was assigned to perform the monitoring on a different post-remedial area. It should be noted that the teachers are performing this work voluntarily; EPA is not paying them or the schools. However, we are looking into possible funding for future years.

Approximately one month after the schools collected the data, EPA and FWS met with the teachers to review the data, answer questions, and help the teachers coordinate the data. Each school will submit their data independently to EPA. EPA will then join the data together into one large report and send it back out to all the schools. This coordination will allow EPA and the students to compare data from each of the four schools to determine if any trends exist.

Each teacher expressed excitement about this project. More specifically, each teacher found that their students were not only excited, but also committed to the project because the data will be used by the EPA to evaluate the success of the site-specific remedy. The teachers indicated that their students felt quite important and that this project meant more to them because their data was actually going to be used by EPA.

As stated previously, this may be a first for the Agency, to have local communities, particularly high school students, monitor the progress of a Superfund remedy. This gives the students an opportunity to learn "hands-on" what a scientist does and to learn more about the history of mining and its impacts on their community. Each school is required to do public outreach (presentations at local community meetings, articles in newspapers, etc.) with their results, thereby ensuring that the information will be disseminated beyond the high school out to the wider audience in the community. This project is great for the Agency in that we not only get data about our remedy but the outreach helps to continue our already good relations with the local public.

[Editor's note. For further information contact Brenda R. Jones at [jones.brenda@epa.gov](mailto:jones.brenda@epa.gov) or (312) 886-7188. Until earlier this year when Brenda changed hats and became an RPM, she was an ecologist in the Superfund program in region 5.]

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### ***Impermeable Cap Fabrication and Installation***

**Piper Peterson Lee, RPM, Region 10**

#### *History:*

The Head of the Thea Foss Waterway is part of the larger Commencement Bay/Nearshore Tideflats Superfund Site in Tacoma, Washington. The remedial design/remedial action for Head of the Waterway is being performed under a Consent Decree signed by Puget Sound Energy, PacifiCorp and Advance Ross-Subcompany (known as the Utilities). In addition to general sediment contamination, a sporadic oily sheen was identified several years ago. Further subsurface explorations using divers and grids identified a 50 x 60 square foot area in which nonaqueous phase liquid (NAPL) droplets bubble up through the subsurface sediments and either roll onto the adjacent surface sediments or are entrained onto methane gas bubbles and float to the surface at very low tides. A pool of NAPL has been identified throughout the bottom of the Head of the Waterway, but it is expressed only intermittently in this area.

The Utilities' conceptual model of the area, presented in a document by Foster Wheeler in 2002, describes this as an area where timber piles were pulled as part of bridge construction. Pulling the piles appears to have sucked NAPL to the surface and may have caused a preferential pathway for upward migration of methane bubbles, NAPL, and groundwater. Throughout the majority of the site, fine-grained materials that overlie the NAPL are effective in containing the NAPL except in the SR-509 area.

#### *Remedial Design:*

The remedy was to contain the seep with a two part cap--an impervious cap covering the known seep area and areas beyond the edges (approximately 10 feet on each side) at approximately -14 feet mean lower low water (MLLW) and then a cap composed of fine/coarse sand with 0.5% total organic carbon (TOC) to -9 feet MLLW. The impervious cap is expected to prevent the release of NAPL and significantly reduce the flux of contaminated groundwater through the preferred pathway. In addition, the proposed cap design is expected to control the possible development of preferential pathways to adjacent sites by increasing the migration distance between NAPL-contaminated sediments and the sediment-water interface.

#### *Fabrication/Installation:*

The fabricator (Kel-Tech Plastics, Tacoma and Lakewood, Washington), the designer (TetraTech FW), and their structural engineer (Berger/Abam) had considerable interaction to develop fabrication and installation quality assurance procedures, particularly as related to welding of the plastic sheets, as there are no industry standards for welding plastics.

Materials. Virgin grade high density polyethylene (HDPE) sheets 10 ft long by 5 feet wide by 0.375 inches thick were welded into seven panels (10 x 75 ft) in the shop and then welded into one piece (70 x 75 ft) in the field. The attached photo shows the thickness and flexibility of the material.



Site Preparation. The site was gross cleaned using dry methods and fine cleaned by pressure washing prior to field fabrication. The base of the fabrication site was asphalt. Steel beams were placed into the waterway from the top of the bulkhead wall near the shoreline in order to reduce the break-over angle at the top of the bulkhead wall during the installation process. In-water obstructions were identified by divers and removed by marine equipment. Pilings that were in this vicinity were cut off 3 feet below the mudline and backfilled with 1 to 2 cubic yards of capping material to ensure the base of the waterway was uniform.

Fabrication and Testing. A staggered, perpendicular weld pattern was determined to increase structural integrity of the finished cap. Sheets and edges were beveled at a 45 degree angle. Tack welds were used to hold the panels together during the production welding process. A hot



air welder with a tacking tip was used. The final heat extrusion weld was performed with a Wegner Alpha 220v welder. To maintain consistency during the weld, a rolling cradle was created that followed a guidance shoe along the beveled seam. Welding each seam was done continuously and took approximately 1 hour/seam. All of the welds were visually inspected to ensure that no undercut or under fill areas existed. Aluminum flashing was positioned under every welded seam for quality control static testing. The static test showed any areas of incomplete welds or welds that included pinholes or inclusions or voids. All defective welds were repaired by removing the weld material, re-welding and re-inspecting visually, and static testing. Overall, this material is rigid (like a kitchen cutting board) while maintaining flexibility in the long welded sheets and is extremely strong.

Installation. Small "guides" were welded on top of the final cap and steel was crisscrossed and evenly distributed across the top of the cap to add ballast for negative buoyancy so the cap would rest on the sediment surface during installation. Steel bars were placed on the top and undersides of the leading and trailing edges of the cap in which chains were affixed and used for pulling the cap by barge-mounted winches into the waterway. Small floats were attached to each corner of the leading edge and placed in the waterway at the final locations of the corners of the leading edge to serve as a visual aide from the surface during the installation process.

On November 14, 2003, the cap was placed over the SR-509 NAPL seep area. The crane operator, divers, and personnel attending the winches on the barges and on the shoreline were in communication during cap installation to maintain the proper vertical and horizontal control of the cap. When the cap was in position, the final ballast was placed. Final ballast consisted of a minimum of an 18-inch thick layer of waterway cap material placed in 6-inch lifts. The cap material was placed starting from the lowest point of the cap and working in concentric arcs outward toward the edges of the cap. Surveying for final placement of the cap was performed by surveying the four corners of the cap with assistance from the divers.

It was intended that the cap be placed in the waterway at low, slack tide. However, it was actually placed 3 hours later due to some issues related to preparing the base of the waterway. The entire installation process took about 4 hours from start (moving the cap into the waterway) to finish (final survey).

For further information, please contact me at (206) 553-4951 or "peterson-lee.piper@epa.gov".

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### ***Compost-Free Bioreactors***

Prepared by Timothy K. Tsukamoto, Ph.D., Research Assistance Professor, Univ. of Nevada-Reno  
Provided by Edward R. Bates, Office of Research and Development, Cincinnati

### **Leviathan Bioreactors (Background)**

The Leviathan mine, located in Alpine County, California, occupies approximately 400 acres of land that is disturbed. The annual precipitation at the 7000-7500 ft site is approximately 20 inches per year, of which the majority comes in the form of snow during the winter months.

An acidic seep with an approximate flow of 8-30 gallons/minute is the result of ground water flowing through a section of disturbed material (mainly overburden) east of the pit at the Leviathan Mine.

### Pre 2002 Bioreactors--Treatment Overview

In 1998 a pilot scale compost-free bioreactor was constructed to treat acid mine drainage (AMD) from the Aspen Seep. This treatment system consisted of two anaerobic ponds, designed for sulfate reduction and sulfide precipitation. Pond 1 contained mostly wood chips approximately 1-3 in in size while pond two contained mostly inert river rock approximately 2-4 in in size as a matrix. Pond 1 originally had a capacity of approximately 24,000 gallons and pond 2 had approximately 26,000 gallons.

This compost-free bioreactor utilized sulfate-reducing bacteria to generate hydrogen sulfide and elevate pH and precipitate divalent metals as metal sulfides. Unlike compost bioreactors, this bioreactor utilized a matrix that maintained hydraulic conductivity over time. This was accomplished by using a combination of inexpensive liquid carbon sources and an essentially non-reactive matrix that could be flushed to remove metal sulfide precipitates.

The pre 2002 bioreactors operated for approximately two years without the addition of base. While treatment was good at low flows, iron removal decreased as flows were increased. However, the bioreactor continued to remove copper, nickel and sulfate efficiently throughout the treatment period. The application rates of the carbon sources varied throughout the period, but were typically between 1 and 3 times the stoichiometric equivalent needed to reduce the sulfate in the influent solution.

The low pH (pH~3) of the influent water resulted in less than optimal sulfate-reduction rates. At this time it was determined that due to the conditions at the Aspen Seep it was necessary to pre-treat the water by titrating a small amount of base to the influent stream.

For the final two years plus, sodium hydroxide was added both to the influent, to raise the pH to approximately 4.3 and increase the activity of sulfate-reducing bacteria, and also to the effluent, to raise the pH from 6 to approximately 7 and promote effective precipitation of iron sulfide. This resulted in the production of a sludge, which needed to be settled or filtered. In 2001, a filtration system was installed to capture the majority of this sludge. Table 1 shows water quality data in May 2002.

Table 1. Water Quality Data Subsequent to Base Addition (mg/l)

Constituent	Aspen Seep Influent	Aspen Seep Effluent	Aspen Seep Effluent (settled)
Fe	95.	57.	0.04
Ni	0.53	0.18	0.05
Cu	0.87	n.d.	n.d.
Zn	1.75	0.01	0.01

### Post 2002 Bioreactors

In 2001 plans were initiated to design a new system that incorporated a settling system that would improve the capture of sludge. This newly constructed bioreactor treatment system is composed of five ponds.

The first pond is a pretreatment pond with a capacity of approximately 7,500 gallons. This pond is designed to capture metals that precipitate during the pretreatment pH adjustment.

The second and third ponds are the bioreactors. They contain mainly 8-12 in rock with a small percentage of manure and smaller rock. The capacity of these ponds is approximately 40,000 and 23,000 gallons. Incorporated into the design of these ponds is the ability to manipulate flows. Water can be delivered to or taken from the pond front to back, back to front, top to bottom and bottom to top. In addition, each pond contains a flushing system to remove precipitated solids from the reactors.

The fourth and fifth ponds are sludge removal ponds. The volumes of these ponds are 120,000 and 135,000 gallons. These ponds are designed to settle and remove any precipitated solids that are generated in or flushed into these ponds.

Water that leaves these ponds then enters a cascading aeration trench to promote degassing of residual carbon dioxide and sulfide and promote the oxidation of manganese.

### **Advantages of Compost-free Bioreactors**

Compost type bioreactors suffer from three inherent deficiencies that have been overcome by use of a compost-free bioreactor. These deficiencies, and the corresponding effects of a compost-free bioreactor, are as follows:

- 1) A compost-type bioreactor decreases in permeability with time because the carbon source is also the physical matrix. Over time the matrix is degraded, metals precipitate, a bio-film forms, the pore spaces decrease, and flow is restricted. In a compost-free bioreactor, the matrix consists of nonreactive material, which maintains permeability over time as precipitated metals are removed during regular flushing of the matrix.
- 2) The rate of the sulfate-reduction in a compost bioreactor is difficult to control over long periods of time because the reactant substrate must be added in excess to allow for multi-year life. The mix of organic compounds in a compost bioreactor is complex and the rate of oxidation of these compounds varies. As the preferred energy sources are depleted, alternative compounds that are consumed at a slower rate dominate the rate of sulfate reduction which results in a decreased rate of sulfate reduction over time.

In a compost-free bioreactor, a liquid organic such as ethanol (which is oxidized directly by sulfate-reducing bacteria (SRB)) is added at a stoichiometric concentration with the sulfate being reduced. Thus the rate of sulfate-reduction can be controlled for an extended period of time.

- 3) Because the carbon source that is supplied is directly oxidized by the SRB, much higher rates of sulfate-reduction can be observed. Rates as high as 0.96 mol sulfate/(m<sup>3</sup>-day) have been observed in a methanol enhanced manure matrix reactor and rates as high as 0.56 mol sulfate/(m<sup>3</sup>-day) have been observed in a porous compost-free reactor. Both were observed in the field at the Leviathan mine.

### **Disadvantages of Compost-free Bioreactors**

Although compost-free bioreactors have the advantages stated above, they also have some disadvantages. Since a liquid organic must be continuously added, provisions must be included for storage, resupply and administering the organic liquid. In addition, these bioreactors typically require a higher initial capital investment due to the complexity of the flushing and fluid delivery systems.

[Editor's note. There are a number of other documents that contain information on the treatment of acid mine drainage that I found (of course, there undoubtedly are many more):

- 1) "Methanol as a Carbon Source for Microbiological Treatment of Acid Mine Drainage", T. K. Tsukamoto and G. C. Miller, *Wat. Res.*, **33**, 1365-1370 (1999)
- 2) *Passive and Semi-active Treatment of Acid Rock Drainage from Metal Mines - State of the Practice*, Final Draft Report, URS Corporation, April 2, 2003, which contains two articles which Dr. Tsukamoto authored or co-authored and two articles that James J. Gusek authored or co-authored.
- 3) "Nutrient Enhanced Passive Bioreactor for Treatment of Acid Mine Drainage", T.K. Tsukamoto and G.C. Miller, *Closure. Remediation & Management of Precious Metals Heap Leach Facilities*, edited by Dorothy Kosich and Glenn Miller. January 14-15. 1999 (<http://www.unr.edu/mines/mlc/contents.html>)]

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### ***45-Day Task Force on the Use of Science in Regional Decision Making Issues Final Report (July 28, 2003)***

Review by Tom Barounis, Region 5

In May 2003, Paul Gilman, EPA's Science Advisor and Assistant Administrator for the Office of Research and Development (ORD), requested that the EPA Regions address the critical role of "sound science" in the Agency's decision making. In particular, he asked that they identify: 1) how science is used in Regional decisions; 2) what obstacles exist to using sound science in Regional decisions; and 3) how these obstacles can be overcome. Under the leadership of Region 4, the Regions initiated a review to examine the questions posed to them. The result of their review is the ***Final Report on the 45-day Task Force Study's Findings on the Use of Science in Regional Decision Making***(the Report).

The Report begins with two examples (the **Hudson River** and the **South Florida Everglades**) to illustrate how the Regions have used science to make routine decisions on a variety of activities such as environmental assessment, permit issuance, water quality standards development, compliance and enforcement implementation, and data quality management. A Program-by-Program assessment of ways in which Regions use science in routine decision making is detailed in Appendix 1 of the Report.

The Report goes on to identify obstacles to the Regions' ability to improve the quality of the science used in decision making and to make recommendations for overcoming some of those obstacles. The "obstacles" to sound science include: **A)** obstacles with an internal focus (communication, human resources, and planning issues); **B)** obstacles with an external focus (data reliability, access, and comparability issues); **C)** obstacles to complete and efficient peer review; **D)** obstacles to incorporating the "right science" into Regional decisions; and **E)** obstacles to the effective use of the Regional Science and Technology (RS&T) Labs. Each of these obstacles is examined in its particulars and recommendation(s) to overcoming the obstacle identified. The following examples illustrate some of the obstacles and recommendations discussed in the Report :

*[The examples are, by no means, comprehensive. They are illustrative of the more comprehensive discussion in the Report]*

Locating Agency scientific expertise and obtaining access to the technical support of the Program Offices, including ORD, is an internal obstacle which may be overcome by:

- incorporating Regional support activities into personnel position descriptions and performance agreements;
- strengthening the Hazardous Substances Technical Liaison Program (HSTLP) and establishing similar programs for Regions' water and air programs;
- expanding the Superfund and RCRA Technical Support Centers concept to the water, air and pesticide programs;
- ORD, Program Offices and Regions maintaining a Science Inventory;
- Linking the new ORD-Regional Science Portal to the appropriate websites of all federal and state agencies involved in relevant environmental science-related activities.

Accessing the best pollutant-specific chemical, physical, and toxicological data is an external obstacle which may be overcome by the Agency providing appropriate support to maintain valuable Agency databases (e.g., ambient air and water quality data, IRIS, and Ecotox).

In the area of peer review, although EPA has made significant progress in incorporating the process into its work, the Regions continue to have difficulty implementing peer review in a complete and efficient way. For instance, accessing national-expert peer reviewers without a budget or contractor support is very difficult. To address this particular obstacle, the Report recommends that the Agency provide the needed contractor support for peer reviews of in-house projects that do not otherwise have a budget.

One of the primary recommendations that the Report makes to address obstacles to incorporating "Right Science" into Regional decisions is the designation of an advocate, in the form of a Regional Science Advisor, to systematically promote science within each Region. [Hey, if we can have a "drug czar", why not a Regional "science czar"?]

Finally, decreasing (or fixed) RS&T Lab budgets, increasing nondiscretionary costs (e.g., security, building rental/maintenance fees), and the lack of sufficient capacity to conduct cutting-edge testing (e.g., PCB congeners and dioxins/furans) severely limit the ability of RS&T Labs to support Regional programs. Increasing resources available to support the Regions' ability to conduct cutting-edge testing and expanding the Regional Centers of Excellence concept would go a long way toward overcoming these obstacles.

The Report concludes by noting that *"Defining and implementing solutions represents a difficult and complex challenge, and [this Report] is just the first step in this process...Still, we hope that this review highlights the critical issues which the Agency needs to address to improve on the existing use of sound science in Regional decisions."*

[Editor's note. I have an electronic copy of the report, "Science in Regional Decision Making", July 28, 2003. If you are interested in obtaining a copy, please let me know.]

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### ***NL Industries Settlements Net \$40,000,000***

**Brad Bradley, RPM, Region 5**

Two settlements that were recently entered in court for the NL Industries/Taracorp Site in Granite City, Illinois (the Site) returned nearly \$40,000,000 to the Superfund. The Site is a former secondary lead smelter that contaminated over 1500 residences via smelter stack emissions and another 125 residences, alleys, and parking lots with crushed hard rubber battery casings. The settlements ended a long history of litigation between EPA and the potentially responsible parties (PRPs).

The first settlement was with the seven largest generators at the Site and included completion of remedial work (EPA paid for the cleanup activities at half of the stack emissions yards and the majority of the battery chip fill properties) valued at \$21,000,000, payment of \$8,970,000 in past costs, payment of a \$400,000 civil penalty, and a \$2,000,000 Supplemental Environmental Project (SEP) to address lead-based paint problems in some of the homes within the Site boundaries.

The second settlement was with NL Industries, the owner/operator, and included payment of \$29,780,000 in past costs and a \$1,000,000 civil penalty.

Collectively, the settlements recovered approximately 94% of EPA's past costs for cleanup activities in the mid-1990s. The generator PRPs finished the cleanup work from 1998-2000. The generator settlement also helps to achieve a multi-media cleanup by addressing approximately 100 homes within the Site boundaries that have the worst lead-based paint problems. Other than the paint SEP, all remedial work has been completed at the Site.

A 1991 blood study at the Site indicated that 16% of children under 7 years old in and around the Site and 25% of the children living nearest the former smelter had blood lead levels exceeding EPA's target level of 10 µg lead/deciliter blood. House dust (from soil and paint) was the major contributor to the high blood lead levels. The Site cleanup and the SEP established through the generator settlement have addressed this very real health threat.

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### ***Las Vegas Technical Support Website Updated***

**Gareth Pearson, National Exposure Research Laboratory, Las Vegas**

The Las Vegas Technical Support Center (TSC) for Monitoring and Site Characterization's website has been updated and contains a number of new features which include:

- on-line form for requesting technical support from the TSC (as always, you can still call Gareth Pearson and discuss/request support);
- pdf copies of issue papers;
- pdf copies of fact sheets;
- ProUCL Version 2.1 that can be downloaded from the website or a FTP site (see details below);
- on-line registration of the software for future notices and upgrades.

The URL for the website is <http://www.epa.gov/nerlesd1/tsc/tsc.htm> .

ProUCL is a software program for the calculation of the upper confidence limit (UCL) that is used for calculation of the exposure point concentration (EPC) that is used for a risk assessment. ProUCL Version 2.1 has been identified in the recent OSWER Directive 9285.6-10, "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites", as a software package that performs many of the calculations described in this guidance. ProUCL Version 2.1 is free and can be obtained at <http://www.epa.gov/nerlesd1/tsc/software.htm> . The file is large (8.5MB) and some systems may not allow a .exe file through their firewall. If this is the case, you can also obtain the file from our FTP site at: [http://ftp.epa.gov/nerlpb/ProUCL\\_2-1](http://ftp.epa.gov/nerlpb/ProUCL_2-1).

NOTE: If you have a functioning copy of ProUCL Version 2.1 you do not need to download and install this version. However, if you have an older version of ProUCL on your computer you will need to manually delete it before installing this version.

The setup program, when run, will create a new directory on your hard drive named ProUCL. The setup program (SETUP.EXE) will install ProUCL Version 2.1 in the ProUCL directory it creates. Setup will also create two other directories (Data and User Guide) and place some test data in the Data directory and a PDF version of the users guide in the User Guide directory. Once Setup has finished installation, you execute the program by running the file PROUCL.EXE from the ProUCL directory.

This should work on all modern machines including Windows 98, 2000, and XP. If ProUCL, installed as suggested here, does not perform correctly please contact Gareth Pearson for assistance (702 798-2101 or [pearson.gareth@epa.gov](mailto:pearson.gareth@epa.gov)).

[Editor's note. At [www.epa.gov/superfund/programs/risk/ragsa/ucl.pdf](http://www.epa.gov/superfund/programs/risk/ragsa/ucl.pdf) you can get a copy of OSWER 9285.6-10, December 2002.]

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***Former Lead Smelter Cleanup Complete  
Cleveland Lumber Company to Reuse Industrial Flats Site***

**Provided by Gwendolyn Massenburg, RPM, Region 5**

U.S. Environmental Protection Agency (U.S. EPA) Region 5 and the City of Cleveland formally transferred the Master Metals property, a former lead smelter shut down by the Ohio Environmental Protection Agency (Ohio EPA) in 1993, to the Northern Ohio Lumber and Timber Company (NOLTCO) on July 17, 2003.

"We are excited that NOLTCO remains committed to Cleveland and will continue to conduct business in the city," said Cleveland Mayor Jane L. Campbell. "We are especially pleased that the partnership with U. S. EPA, Ohio EPA, and the other companies involved has made a once-blighted property usable and profitable once more."

Press on hand at the event: TV-3 NBC, Cable 23, WCPN-NPR and WTAM. William Muno, Superfund Division Director for U.S. EPA Region 5, provided an extensive interview with National Public Radio (NPR).

The non-time-critical removal action at the 4-acre site, 2850 W. 3<sup>rd</sup> St., was completed in May. A group of more than 50 companies deemed responsible for the contamination paid for the work, which was supervised by U.S. EPA and Ohio EPA. The cleanup involved the final excavation and disposal of numerous truckloads of lead-contaminated soil and debris. This is a real brown-field success story--U.S. EPA originally proposed a cleanup plan in 1999 but changed the site remedy to accommodate NOLTCO's reuse plan.

The lumber company, with a local history that dates to the 1860s, will move 1.5 miles from its current address on Carter Road to the site in Cleveland's industrial flats area. NOLTCO had previously considered relocating to a suburban location. The company employs about 15 people.

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***US EPA SITE Program Description***

**Provided by Dr. Stephen Billets, Las Vegas**

Performance verification of innovative environmental sampling, monitoring, and measurement technologies is an integral part of the regulatory and research mission of the U.S. Environmental

Protection Agency (EPA). To address this need, the Superfund Innovative Technology Evaluation (SITE) Program was established by EPA's Office of Solid Waste and Emergency Response and the Office of Research and Development under the Superfund Amendments and Reauthorization Act of 1986. The overall goal of the Program is to conduct performance verification studies and to promote the acceptance of innovative technologies that may be used to achieve long-term protection of human health and the environment. The program is designed to meet three objectives: 1) to identify and remove obstacles to the development and commercial use of innovative technologies; 2) to demonstrate promising innovative technologies and gather reliable performance and cost information; and 3) to develop procedures and policies that encourage the use of innovative technologies at Superfund and other hazardous waste sites.

The SITE Program has two basic components: the Remediation Technologies and the Monitoring and Measurement Technology (MMT) Programs. The MMT Program evaluates innovative technologies that sample, detect, monitor, or measure hazardous and toxic substances in soil, water, and sediment samples. These technologies are expected to provide better, faster, or more cost-effective high quality data during site characterization, remediation, or hazard evaluation studies than conventional technologies.

**SITE Demonstration of Dioxin Monitoring and Measurement Technologies** Conventional analytical methods for determining dioxins are time-consuming and costly. The use of simple, rapid, and cost effective screening methods will allow field personnel to rapidly assess the extent of dioxin contamination at a site. Screening data can also be used to provide immediate feedback on potential health risks associated with the site and permit the development of a more focused and cost-effective sampling strategy for subsequent laboratory-based methods. The development and interest in these screening technologies suggests that an assessment of how well they perform and compare to conventional laboratory-based analytical methods is warranted. The demonstration will evaluate the results of over 200 analyses of environmental samples obtained from dioxin contaminated sites in regions 1, 2, 3, 4, 5, and 7.

The SITE MMT Program is currently planning a demonstration of technologies that can be deployed in the field or in a mobile laboratory for the rapid measurement of dioxins in soil and sediment. The demonstration is scheduled for the Spring of 2004. The following technology developers will be participating in this demonstration:

CAPE Technologies	Hybrizyme
Paracelsian, Inc.	Strategic Diagnostics Inc.
Xenobiotic Detection Systems, Inc.	WAKO Chemicals

For information about this program, please contact Dr. Stephen Billets, [billets.stephen@epa.gov](mailto:billets.stephen@epa.gov), 702-798-2232.

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### *CoChairs' Corner*

**Julie Santiago, NARPM Co-Chair, Region 4**

### **OSC Readiness Training**

During the week of November 17 through November 21, 2003, four of the NARPM Co-Chairs attended the OSC Readiness Training in Miami, Florida. The co-chairs obtained training ideas for the NARPM May conference and the visit also helped with planning hotel logistics.



**REMINDER ---- REMINDER----- REMINDER-----****Call for Papers and Panels**

Please remember that the deadline to submit paper and panel abstracts for the May conference is December 31, 2003. We still look forward to hearing from you. Please refer to Mary T. Cooke's emails dated October 8, 2003 for the format for the submissions. All abstracts must be sent via email, before the deadline, to Mary T. Cooke, Region 3 (cooke.maryt@epa.gov) and Stacey Bennett, Region 6 (bennett.stacey@epa.gov).

**REMINDER ---- REMINDER ----- REMINDER -----****Call for Moderators**

For this year's conference we are looking for moderators who will be willing to devote the time necessary for the assigned paper or panel session to organize the presentations for the session, take notes during the session, and provide a short narrative of the highlights of the session. The moderator must submit the narrative for his/her paper or panel session within 30 days after the conference. The narratives will be included in the annual Conference Summary Report. If you are interested in being a moderator, please contact Mary T. Cooke (Region 3) and Stacey Bennett (Region 6) via email by January 30, 2004.

**Committee Volunteers Needed**

We still need volunteers from the different regions to serve on the following NARPM committees:

- Policy and Guidance--Need representatives from Regions 1, 3, and 10.
- Newsletter Committee--Need a representative from Region 2.
- Career Development Committee--Need representatives from Regions 1, 2, 3, 4, 6, 8, &10.

The committees work on various RPM issues throughout the year. Please contact any of the NARPM co-chairs (Nestor Young, Stacey Bennett, Mary T. Cooke, Mario Robles, or Julie Santiago) if you are interested in serving on any of these very important committees.

**Stacey Bennett, NARPM Co-Chair, Region 6**

**"Information from the Nation's Capital"**

Each year, the NARPM co-chairs meet with EPA Headquarters to promote the goals of NARPM and to discuss hot issues and topics, from an agency perspective, that can be incorporated into the NARPM annual conference.

During the week of December 8, 2003, the co-chairs met with Marianne Horinko, Assistant Administrator (AA) for the Office of Solid Waste and Emergency Response (OSWER); the OSWER Science Team; the Office of Superfund Remediation and Technology Innovation (OSRTI) (formerly the Office of Emergency and Remedial Response (OERR)) division directors and associate division directors; OSRTI branch chiefs; Office of Site Remediation and Enforcement (OSRE); OSRTI Sediment Team; Superfund Redevelopment; Headquarters contacts for the Technical Support Project (TSP); and the Federal Facilities Restoration and Reuse Office (FFRRO). Because of the great training and outreach that NARPM has conducted in the past, all

of the Headquarters contacts were very supportive of our organization and enthusiastically provided suggestions on "topics and issues" to include in our conference.

Some of the recurring messages and themes that we heard during our visit were: 1) optimization of treatment systems, 2) environmental indicators, 3) evolving science, 4) cost management, 5) exit strategies, 6) working with the states, tribes, and other agencies, and 7) communicating success with the Superfund program. We will try to include as many of these messages in planning for the conference.

A second goal of the co-chairs meeting with EPA Headquarters was to promote our committee activities. NARPM is not just an organization that focuses on the planning for the annual conference. NARPM has several committees that work on issues impacting RPMs throughout the year. As a result of promoting our committees, we received two requests during our visit with Headquarters.

Marianne Horinko requested that NARPM provide feedback on the Superfund reforms of the 1990s (refer to [www.epa.gov/superfund/programs/reforms](http://www.epa.gov/superfund/programs/reforms) for information on the Superfund reforms). The AA is interested in knowing which of the Superfund reforms RPMs have most frequently implemented. In addition, the AA also requested that NARPM provide feedback on the recommendations in the National Advisory Council on Environmental Policy and Technology (NACEPT) report that is scheduled to be released final in mid-spring. A draft copy of the current NACEPT recommendations can be found on [www.epa.gov/oswer/SFsub.htm](http://www.epa.gov/oswer/SFsub.htm).

Betsy Southerland, soon to be a Division Director in OSRTI, requested that NARPM provide feedback on optimization recommendations. Over the past couple of years, Headquarters selected 30 pilot sites in which site specific recommendations were provided for optimizing pump-and-treat systems. The office director would like NARPM to provide suggestions on the effectiveness and practicality of the recommendations reports as well as provide feedback on a process in which Headquarters can receive future feedback on the progress of those recommendations that are being implemented by RPMs.

As you can see, RPMs continue to be highly involved in promoting valuable feedback in the clean-up of our nation's Superfund sites.

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### *Miscellaneous*

***Human Health Toxicity Values in Superfund Risk Assessments.*** This OSWER Directive (9285.7-53) was issued on December 5, 2003 by Michael B. Cook, Director, Office of Superfund Remediation and Technology Innovation (OSRTI). The memorandum presents current Office of Solid Waste and Emergency Response (OSWER) technical and policy recommendations regarding human health toxicity values in risk assessments. It revises the hierarchy of human health toxicity values generally recommended for use in risk assessments that were originally presented in *Risk Assessment Guidance for Superfund*, Volume I, Part A, "Human Health Evaluation Manual" (RAGS) (OSWER 9285.7-02B, EPA/540/1-89/009, December 1989). The memo provides guidance for the sources of toxicity information that should generally be used in performing human health risk assessments at Superfund sites. It does not address the situation where new toxicity information is brought to the attention of USEPA. It also does not provide guidance or address toxicity or reference values for ecological risk. Public comments on this memorandum are welcomed at any time.

The revised recommended toxicity value hierarchy is: Tier 1--USEPA's Integrated Risk Information System (IRIS); Tier 2--USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs) (toxicity values developed by the Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center (STSC) on a chemical specific basis when requested by USEPA's Superfund program); Tier 3--other toxicity values.

See <http://www.epa.gov/oerrpage/superfund/programs/risk/toolthh.htm#general> to obtain a copy of the memorandum.

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**Tetrachloroethylene Cancer Toxicity.** In a June 12, 2003 letter (OSWER No. 9285.7-75), Elizabeth Southerland, Deputy Director, Office of Emergency and Remedial Response (OERR), responded to recent inquiries concerning cancer toxicity values to evaluate inhalation and ingestion risks from exposure to tetrachloroethylene (tetrachloroethene), also commonly known as perchloroethylene (PCE). In particular, the letter addressed whether it would be appropriate to use a California Environmental Protection Agency (Cal EPA) inhalation unit risk value and oral slope factor. The letter superseded an earlier version.

In summary, it was stated that OERR supports the use of the Cal EPA Air Toxics Hot Spots Program inhalation unit risk of  $5.9 \text{ E-6 } (\mu\text{g}/\text{m}^3)^{-1}$  for Superfund sites as the best value available at the time of the letter. Similarly, OERR also supports the use of the Cal EPA Public Health Goal in Drinking Water oral slope factor of  $5.4 \text{ E-1 } (\text{mg}/\text{kg}\cdot\text{day})^{-1}$  for PCE.

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**Trichloroethylene Health Risk Assessment: Synthesis and Characterization.** This external review draft (EPA/600/P-01/002A, dated August 2001) was recommended to be used for the most current toxicity values for trichloroethylene (trichloroethene or TCE) in a July 15, 2003 email from Ann Parker, USEPA's Superfund Technical Support Center (STSC), National Center for Environmental Assessment. See <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=23249> to obtain a copy of the draft. The Abstract of the draft states:

This assessment presents EPA's most current evaluation of the potential health risks from exposure to TCE (trichloroethylene). TCE exposure is associated with several adverse health effects, including neurotoxicity, immunotoxicity, developmental toxicity, liver toxicity, kidney toxicity, endocrine effects, and several forms of cancer. Mechanistic research indicates that TCE-induced carcinogenesis is complex, involving multiple carcinogenic metabolites acting through multiple modes of action. Under EPA's proposed (1996) cancer guidelines, TCE can be characterized as "highly likely to produce cancer in humans."

For effects other than cancer, an oral RfD of  $3 \times 10^{-4} \text{ mg}/\text{kg}\cdot\text{d}$  was based on critical effects in the liver, kidney, and developing fetus. An inhalation RfC of  $4 \times 10^{-2} \text{ mg}/\text{m}^3$  was based on critical effects in the central nervous system, liver, and endocrine system. Several cancer slope factors were developed, with most between  $2 \times 10^{-2}$  and  $4 \times 10^{-1}$  per  $\text{mg}/\text{kg}\cdot\text{d}$ . Several sources of uncertainty have been identified and quantified.

The mechanistic information suggests some risk factors that may make some populations more sensitive. There are suggestions that TCE could affect children and adults differently. In addition, several chemicals have the potential to alter TCE's metabolism and clearance and subsequent toxicity; conversely, TCE exposure can augment the toxicity of other chemicals. Widespread environmental exposure to some of TCE's metabolites makes it important to consider the cumulative effect of TCE along with other environmental contaminants.

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***Technical and Regulatory Guidance for Design, Installation, and Monitoring of Alternative Final Landfill Covers***, December 2003, prepared by **The Interstate Technology & Regulatory Council** Alternative Landfill Technologies Team. This alternative final cover technical and regulatory guidance document is primarily written for decision makers associated with the plan development, review, and implementation of alternative final covers (AFCs). The document focuses on the decisions and facilitating the decision processes related to design, evaluation, construction, and post-closure care associated with AFCs. To facilitate the use of this document and understanding of the decision process, an electronically interactive decision tree is provided. The document provides input related to key decision steps in the permitting, design, construction, and maintenance of AFCs.

USEPA maintains a database that, as of September 2003, was tracking 64 alternative landfill cover demonstration projects and full-scale operating facilities in 18 different states. Annual rainfall associated with these alternative landfill cover projects ranges from a low of approximately 3.5 to a high of 56 inches per year. Alternative landfill covers are already in use in a variety of settings. Also, the designs are approved and field testing is being conducted at pre-Subtitle D unlined facilities, Subtitle D lined facilities, pre-Subtitle C unlined facilities, and Subtitle C lined facilities.

Alternative final landfill covers have several potential benefits over the conventional landfill covers, while potentially being equally protective of human health and the environment. Some of these benefits are more readily available construction materials, ease of construction, less complex quality assurance/quality control programs, increased long-term cover integrity, and stability.

Types of AFCs may include, but are not limited to, asphalt covers, concrete covers, capillary barrier covers, and evapotranspiration (ET) covers. This document focuses on ET covers and the decisions associated with their successful design, construction, and long-term care. The AFCs discussed in this document are assumed to be ET covers.

The document is available at <http://www.itrcweb.org/ALT-2.pdf>. The above is condensed from the Executive Summary.

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***Treatment Standards for Mercury-Containing Debris Memo***. Robert Springer, Director, Office of Solid Waste, issued this October 23, 2003 memorandum to discuss the issues pertaining to the treatment and disposal of debris containing mercury that is subject to the treatment standards for hazardous debris in the RCRA land disposal restrictions at 40 CFR 268.45. The topics discussed in the memorandum have been raised to the Agency as areas for clarification or have arisen from advancements in research and technology.

Treatment standards for land disposal for D009 wastes (wastes that meet the toxicity characteristic for mercury) that are not classified as debris and are not wastewaters or mixed wastes are provided in 40 CFR 268.40. Debris and hazardous debris are defined in 40 CFR 268.2. What is excluded from the debris definition is also important; in particular, what is containerized mercury needs to be understood.

The memorandum describes four technologies that might be used for mercury-containing debris: microencapsulation, macroencapsulation, source separation, and retorting.

It is important when addressing what is to be done with mercury-containing materials that the regulations of the state be considered.

See <http://www.epa.gov/epaoswer/hazwaste/mercury/index.htm> for the safe mercury management Internet site. This site contains a link to a copy of this memorandum.

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**National Emission Standards for Hazardous Air Pollutants (NESHAP) From Site Remediations** were promulgated in the *Federal Register* on October 8, 2003 (vol. 68, No. 195, pp 58171 ff.). The final rule implements the Clean Air Act (CAA) section 112(d) to control emissions of hazardous air pollutants (HAP) at major sources where remediation technologies and practices are used at the site to clean up contaminated environmental media (e.g., soils, groundwaters, or surface waters) or certain stored or disposed materials that pose a reasonable potential threat to contaminate environmental media. Site remediations subject to the final rule are required to control emissions of organic HAP by meeting emissions limitations and work practice standards reflecting the application of maximum achievable control technology (MACT). The final rule applies to certain types of site remediation activities that are conducted at a facility where nonremediation sources are a major source of HAP emissions. Some site remediations already regulated by rules established under the Comprehensive Environmental Response and Compensation Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA) are not subject to the final rule. (The above was taken from the Summary in the *Federal Register*.)

To determine whether a facility is subject to the final rule, one needs to carefully examine the applicability criteria.

The final rule amends 40 CFR part 63 by adding subpart GGGGG--"National Emission Standards for Hazardous Air Pollutants for Site Remediation".

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**Changes to Cleanup Plan for New Bedford Harbor.** As one of the region's mega-sites, the New Bedford Harbor cleanup is an ongoing project. The problem at New Bedford is sediments contaminated with polychlorinated biphenyls (PCBs) and heavy metals. While dredging has always been part of the selected remedy, the method of treatment and disposal has changed since the Record of Decision (ROD) was signed. It has gone from incineration to on-site containment to, now finally, off-site disposal. The change from on-site containment to off-site disposal was made in Winter 2002 for several reasons (i.e., cost, site-specific technical difficulties, and lesser impact to local businesses). Currently, in Fall 2003, construction is ongoing for a dewatering facility, desanding facility, and water treatment plant. Full-scale dredging of approximately 880,000 cubic yards of contaminated sediment is scheduled for Fall 2004. (Information from Bob Lim, Region 1, October 23, 2003)

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**Groundwater Evaluation and Optimization System.** GEOS, which is being used in region 5, is a complex, innovative collection of automated high tech tools that provide spatial analyses of large amounts of data to support environmental decision making. GEOS focuses primarily on groundwater data. However, it is capable of storing and analyzing all data associated with long-term monitoring, including data related to surface water, leachate, discharges, process water, and sediments and historical data from remedial investigations and feasibility studies.

The impetus in the late 1990s for the creation of GEOS (until recently referred to as "ED-MAN") was the large, and ever-increasing, volumes of groundwater monitoring data being generated as more and more Superfund sites entered the post-construction completion (PCC) phase.

Part of what managing a PCC site entails is periodically (at least every five years) evaluating whether a site remedy remains protective of human health and the environment. The main objective of GEOS is to provide management and staff with access to sophisticated software application tools that will assist them in completing this important task. This in turn will allow Superfund to create five-year review reports that are detailed and complete and that clearly communicate and confidently support their conclusions regarding remedy protectiveness. GEOS is currently developing automated and semi-automated methods and models which will be able to interface with the region 5 Superfund environmental databases that are being populated and will

be able to evaluate the effectiveness, protectiveness and compliance status of Superfund remedies.

The latest GEOS development is a Web-based interface at [r5geos.epa.gov/geos](http://r5geos.epa.gov/geos). This simple to use Web-application displays site specific data for a growing number of PCC sites and geographic information systems (GIS) data for all regional Superfund sites. Some capabilities include determining statistically significant trends, plotting custom graphs, display of site specific contamination over GIS displays such as aerial photos, generating customized plots and print-outs, querying of monitoring data, data comparison against enforcement standards, and report display in a variety of different formats. In addition, all graphs, charts, and maps can be directly copied and pasted into WordPerfect documents. The GEOS Web-application can also display GIS information relative to the location of any Superfund site such as municipal wellhead protection zones, public and private wells, wetlands, and/or environmentally sensitive areas.

[Editor's note. The above information was taken from the October 9, 2003 memorandum that Steven Padovani (312-353-6755) prepared for the Superfund Division in region 5. Not all of the information that he provided about GEOS has been included. For further information please contact Steve, Dave Wilson (312-886-1476), or Mary Tierney (312-886-4785).]

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**Technical Support Project Fall 2003 Meeting.** The Engineering Forum, the Groundwater Forum, and the Federal Facilities Forum, the components of the Technical Support Project (TSP), held their fall meeting in Niagara Falls, NY in October 2003. The technical topic for this meeting dealt with fractured bedrock.

The summary of the business sessions is available at [www.epa.gov/tio/tsp/meetings.htm](http://www.epa.gov/tio/tsp/meetings.htm). The summary of the technical sessions, except for the training that was presented on the second day, will be posted on the webpage later in December. It is also to be available on a CD.

At present, the plan is that the TSP will hold their spring meeting in conjunction with the annual NARPM conference from May 24 through 28, 2004 in Miami Beach, Florida.

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**Groundwater Sampling.** In the Winter 2002 issue of *Adventures in Wasteland* it was reported that the Ground Water Forum had announced the completion of *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*. This May 2002 issue paper (EPA 542-S-02-001) is available through [www.epa.gov/tio/tsp/issue.htm](http://www.epa.gov/tio/tsp/issue.htm).

The issue paper provides sampling guidelines primarily for groundwater monitoring wells which have a screen or open interval with a length of ten feet or less which can accept a sampling device. A summary of current and/or recommended groundwater sampling procedures is provided. The guidelines were developed by the Superfund/RCRA Ground Water Forum and incorporate comments from the Office of Research and Development, regional Superfund hydrogeologists, and others. The guidelines are applicable to the majority of sites, but are not intended to replace or supersede regional and/or project-specific sampling plans. These guidelines are intended to assist in developing sampling plans using the project-specific goals and objectives.

After the release of the issue paper it was reported that the American Society for Testing and Materials (ASTM) had sent an e-mail to Robert Springer of the Office of Solid Waste (OSW) lodging a complaint against the paper. Reportedly, ASTM was asking OSW to discontinue use of the paper, and they have two issues: (1) there are inaccuracies and misleading statements in the issue paper and (2) USEPA did not coordinate production of the paper with voluntary bodies such as ASTM as required by law. The Ground Water Forum reportedly is working on this complaint.

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**"Evapotranspiration Landfill Cover Systems Fact Sheet".** The Technology Innovation Program released this September 2003 fact sheet (EPA 542-F-03-015) that summarizes an innovative final cover design called evapotranspiration (ET) covers. ET covers are increasingly being considered as part of the remediation and final closure for landfills or sites with contaminated areas at or near the ground surface. They have been proposed, tested, or installed at 64 sites (as of September 2003) located throughout the United States, including 7 Superfund sites. The fact sheet presents general information on design, performance, monitoring, cost, current status, use limitations, and project-specific examples. Go to <http://clu.in.org> and click on "Publications and Studio" to get to a copy. See <http://clu.in.org/products/altcovers/> for more information on alternative landfill covers.

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**Identifying Mystery Pollutants** The USEPA's Environmental Chemistry Branch (ECB) in Las Vegas has developed a novel mass spectrometric technique for identifying compounds found in extracts of environmental samples for which mass spectra are not found in mass spectral libraries. ECB frequently uses this technique (Ion Composition Elucidation--ICE) to identify mystery compounds of interest to the EPA's regions. As examples, several isomeric compounds found in a municipal well that serviced 50,000 people near Toms River, NJ, were identified for Region 2; sulfur-containing compounds most likely produced by anaerobic bacteria and chlorine-containing compounds resulting from pesticide manufacture in a Superfund site near Tampa, Florida were identified for Region 4; and currently, halogenated (Cl, Br, and I) phenols and other compounds are being identified for Region 1 in a subsurface drinking water source that rests above a plume of industrial wastes. Details concerning ICE and its applications are available at <http://www.epa.gov/nerlesd1/chemistry/ice/default.htm>. ECB's expertise is available to USEPA's regions for identifying organic pollutants that are difficult to identify by conventional means. (Information provided by Andrew H. Grange, Ph.D., Las Vegas, 702-798-2137, [grange.andrew@epa.gov](mailto:grange.andrew@epa.gov))

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**Interstate Technology & Regulatory Council.** The December 2003 issue of ITRC's Quarterly Update is now available on ITRC's Web site ([www.itrcweb.org](http://www.itrcweb.org)) under "Quarterly Updates." There are reports about the Fall Meeting in Monterey and work in concert with the Wildlife Habitat Council. The issue also contains the latest news from the State Engagement Team and the technical teams. While you are there take a look at the September 2003 issue. It reports on the meeting between the ITRC Board of Advisors and the Board of Directors of the Environmental Research Institute of the States (ERIS) at the annual meeting of the Environmental Council of the States in Salt Lake City. This issue also contains a note from R. Lewis Shaw, ERIS president, to ITRC members; solicits co-chair and state engagement coordinator nominations; reports on the Midyear Review held in Princeton, N.J. in mid-July and planned activities at the upcoming Fall Meeting in Monterey, Calif.; and presents the latest news from the State Engagement Team and the technical teams.

In March 2003 ITRC released document ALT-1, *Technology Overview Using Case Studies of Alternative Landfill Technologies and Associated Regulatory Topics*. The document presents examples of flexibility used in regulatory frameworks for approving alternative landfill cover designs, current research information about the use of alternative covers, and examples of approved designs and constructed covers. These alternatives may rely on native vegetation rather than artificial liners to keep water from reaching buried waste.

Periodically you should visit the ITRC Web site and check out what is upcoming in Internet based training and classroom training. The trainings are based on the guidance documents that ITRC groups prepare.

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**Superfund Response Actions: Temporary Relocations Implementation Guidance.** This guidance document (OSWER 9230.0-97, dated April 2002) provides regions and potentially responsible parties (PRPs) with policy and procedures for temporarily relocating residents during response actions carried out under Sections 104 (a) and 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Overall, the guidance provides regions the flexibility necessary for solving complex temporary relocation issues. It also provides a decision framework to ensure consistency in the fair and equitable treatment of residents affected by the temporary relocation.

See [www.epa.gov/superfund/tools/topics/relocation](http://www.epa.gov/superfund/tools/topics/relocation) for the Superfund relocation page. A copy of the guidance can be obtained there.

The Office of Superfund Remediation and Technology Innovation (OSRTI) is now offering a course on temporary relocation which is based on the above guidance. The first course is scheduled for January 13 and 14, 2004, in Dallas TX. Go to [www.trainex.org](http://www.trainex.org), click on courses, click on courses by title, and go to "Temporary Relocation" for registration information and a course description. Contact Terri Johnson at (703) 603-8718 with questions about the course.

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**CERCLA Municipal Solid Waste Exemption Guidance.** USEPA recently issued guidance on the CERCLA Municipal Solid Waste Exemption. The Small Business Liability Relief and Brownfields Revitalization Act (SBLBRA), signed in January 2002, gave relief from liability and response costs under CERCLA Section 107 to some small generators of municipal solid waste, residences, small businesses, and non-profit organizations. USEPA rarely engages in contribution litigation with municipal solid waste generators. The guidance is intended to aid USEPA regional and Department of Justice personnel in instances when enforcement is being considered. Go to <http://cfpub.epa.gov/compliance/resources/policies/cleanup/superfund/> and click on liability in order to get to a copy of the document, "Interim Guidance on the Municipal Solid Waste Exemption Under CERCLA §107(p)", August 20, 2003.

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**Dynamic Field Activities.** Dynamic field activities are hazardous waste site assessment, characterization, and remediation activities that combine on-site data generation with on-site decision making. It is an iterative field work process that is designed to reduce the number of mobilizations necessary to reach a site decision. Because of its flexible approach to data collection, it is applicable throughout the Superfund response process.

The process requires the use of "dynamic" work planning which allows adjustments to be made in the field as site conditions and new information dictate. It also emphasizes the importance of having experienced technical personnel on-site and the use of field-based analytical methods as the primary source of data used in decision-making. Dynamic field activities have the potential to significantly reduce the time and cost of field activities while also increasing the quality of site decisions.

The dynamic field activities home is at [www.epa.gov/superfund/programs/dfa](http://www.epa.gov/superfund/programs/dfa).

See [/www.epa.gov/superfund/programs/dfa/download/guidance/40r03002.pdf](http://www.epa.gov/superfund/programs/dfa/download/guidance/40r03002.pdf) to get a copy of *Using Dynamic Field Activities for On-Site Decision Making: A Guide for Project Managers*, May 2003, EPA/540/R-03/002, OSWER No. 9200.1-40. A fact sheet is also available.

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**"Managing Uncertainty and Systematic Planning for Environmental Decision Making"** is the DOE EM-3 three-day course on the data quality objectives process. The objective of the course is to "institutionalize" managing uncertainty and systematic planning throughout the Department of Energy complex and the environmental community.

As stated on the web site, "The EPA has recognized the Data Quality Objectives process as excellent method to manage uncertainty and to accomplish systematic planning. The course provides instruction on the practical management and implementation of the U.S. EPA's 7-Step DQO Process. The target audience is DOE, State and Federal regulators, their management, technical support staff, and their contractor project managers/engineers and technical support staff. The first day explains the 'big picture' and the last two days provide the details of implementation of the DQO Process."

DOE has a Web site for data quality objectives at <http://www.hanford.gov/dqo/>. Through this site you can obtain further information about the course.

Rosauro Delrosario of region 5 has highly recommended the course.

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**Uniform Environmental Covenants Act.** A new act which restricts the use of contaminated real estate was approved on August 6, 2003 by the National Conference of Commissioners on Uniform State Laws (NCCUSL) at its 112<sup>th</sup> Annual Meeting in Washington, DC. The **Uniform Environmental Covenants Act** (UECA) will provide clear rules for a valid real estate document--an "environmental covenant"--to regulate the use of brownfields when real estate is transferred from one person to another. It is expected that UECA will provide clear rules for the states to create, enforce, modify, and terminate environmental covenants to regulate the use of contaminated real estate and permit economic re-use of the property. UECA applies traditional real estate law principles to environmental covenants to ensure that valid land use restrictions will be perpetually enforced against subsequent owners of the property, no matter how many times the affected real estate is transferred.

The UECA project has a website at [www.environmentalcovenants.org](http://www.environmentalcovenants.org).

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**40 High-Priority Superfund Sites Cleaned Up** In a November 4, 2003 press release USEPA Headquarters announced that forty high-priority hazardous waste sites across the country were cleaned up in fiscal year 2003. That brought the number of sites on the Superfund National Priorities List (NPL) that have reached construction completion to 886 at the end of fiscal year 2003. The majority of Superfund site clean-ups are conducted by private parties responsible for the contamination, under USEPA control and pursuant to USEPA enforcement actions. Historically those have represented about 70 percent of all clean-up activity.

Also in fiscal year 2003 USEPA proposed 14 new sites for the NPL and placed 20 on the final NPL, making them eligible for long-term remedial action federal funding. This brought the total number of final sites on the NPL to 1243.

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**Identity Theft.** Region 3 has placed on their Intranet site some information concerning this increasingly important topic ( [http://intranet.epa.gov/r3intran/id\\_theft.htm](http://intranet.epa.gov/r3intran/id_theft.htm) ). Listed are preventive measures that you can take, the Internet addresses of the three major credit reporting companies, and steps to take if you are a victim. There are some quick links that will provide further information.

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## News

**New England Region Superfund News.** A number of new chiefs in EPA New England's Office of Site Remediation and Restoration were named in the past several months. Mary Sanderson was named a Branch Chief taking over the branch formerly run by Donald Berger. Mary recently completed a one-year detail as the special assistant to Ira Leighton, the Deputy Regional Administrator, and was the former Section Chief of the Federal Facilities Superfund Section. Bryan Olson was named the new Section Chief of the Federal Facilities Superfund Section. Bryan brings with him experience from working on the GE Pittsfield site. Lastly, Bob Cianciarulo was named the Section Chief for the Technical Support & Site Assessment section. (Information from Bob Lim, Region 1, October 23, 2003)

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**Region 9.** There are a few new babies in the region. **Melissa Pennington's** baby girl was born April 9 at 12:20 pm. Her name is Maryjane Louisa Pennington. Upon arrival, she weighed 6 lb 6 oz and she stretched out to about 19 3/4". Melissa has just returned to the office from maternity leave to continue working on her Arizona sites.

**Eugenia Chow** gave birth to her boy, Christopher Alexander Mullen, on June 2. He was big at 8 lb 10 oz! Eugenia is a former NARPM Co-chair and has long been active in NARPM. Reportedly she will not be returning to Superfund remedial work but has instead accepted a position in the States, Tribes & Site Assessment section in the Emergency Response, Planning and Assessment Branch as a project officer for Nevada and Hawaii state grants.

**Andy Bain** and wife Roseanna have a new baby girl named Sonya Barbara. Sonya was born June 25 at 8:38 pm and weighed in at 6 lb 14 oz. Andy works on the Tucson Airport and the Navajo Abandoned Uranium Mines.

There are also several new RPMs in the region. On June 18 **Matthew Jefferson** came on board to fill in for Melissa and Eugenia while they were on maternity leave. He recently graduated with a Master's in environmental engineering from UC Davis. On July 13 **Susan Keydel** was brought on board to work on the Montrose site team (LA DDT site). On July 28 **Lynn Suer** came in from the California Water Quality Control Board and was hired to take over Shea Jones's sites. On July 28 **Chris Lichens** came in from E&E to work on several California sites. On July 28 **Robert Rodriguez** came from RCRA to work on one of the several Los Angeles area mega plumes--South El Monte of the San Gabriel Valley site. **Rachel Loftin** will be returning from the Environmental Justice group to fill in for Bob Fitzgerald.

And there have been losses. **Shea Jones** transferred to region 4. **Dianne Strassmaier** moved to the Brownfields team. **Beatriz Bofill** left USEPA; her husband landed a new job in Florida.

**Bob Fitzgerald** is on a 1-year rotational assignment in the Office of Water.  
(This information was supplied by Nadia Hollan, November 13, 2003.)

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**Region 5.** The region has welcomed five new RPMs and lost one RPM. **Demaree Collier** has joined Remedial Response Section 3. She comes from the Great Lakes National Program Office where, since 2001, she focused on sediments and was involved in many of the areas of concern at Superfund sites. Demaree has also worked for TechLaw, between 1998 and 2001, where she provided contract support to USEPA, and at the Indiana Department of Environmental Management from 1996 to 1998. **Howard Caine** and **Patrick Hamblin** have joined Remedial Response Section 5. Howard comes from the Waste, Pesticides, and Toxics Division, Enforcement Branch, where he completed RCRA compliance inspections and enforcement actions at facilities in Illinois, Indiana and Minnesota. He has also participated and has lead several multimedia

inspections for Region 5. Prior to joining the RCRA program, he worked for the Air and Radiation Division and the Environmental Science Division in Region 5 and for Almega Corporation. He has a B.S. in chemical engineering from Tri-State University. Pat comes from region 2 where he was an RPM since 1998. Pat has worked on numerous Superfund sites but most recently has worked on the Mohawk Road Industrial Site. He was also a staff scientist with the Citizens for a Better Environment, Chicago, from 1995 to 1998. Pat has a Masters in environmental engineering, Illinois Institute of Technology, a M.S. in biochemistry, cell and molecular biology, Northwestern University, and a B.S. in biology (philosophy co-major), Creighton University. **Bill Ryan** and **Jena Sleboda** have joined Remedial Response Section 4. Bill comes from the Water Division where he has been a geologist since 1994 in the Groundwater Protection and Underground Injection Control Programs. Bill holds a M.S. in geology and water resources from Iowa State University and a B.S. in geology and biology from Augustana College. Jena comes from the Waste, Pesticides, and Toxics Division where she was an environmental engineer in the Enforcement and Compliance Assurance Branch since September 2000. From December 1999 to September 2000 Jena worked for Region 5's Water and Superfund Divisions, FIELDS Group, as a GIS analyst and research associate. She is currently working on her M.S. in civil and environmental engineering at the University of Illinois at Chicago and holds a B.S. in environmental engineering from the Illinois Institute of Technology.

**Terry Roundtree** has left region 5 and transferred to region 6, in Superfund.

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#### NARPM CONTACTS

NARPM National Co-Chairs				
REG	NAME	PHONE	FAX	MAIL CODE
4	Nestor Young	404-562-8812	404-562-8788	NSMB
6	Stacey Bennett	214-665-6729	214-665-7264	6EN-HT
8	Mario Robles	303-312-6160	303-312-6897	8EPR-SR
3	Maryt Cooke	215-814-5129	215-814-3005	3HS13
4	Carmen Santiago-OCasio (Julie)	404-562-8948	404-562-8896	WMD-SSMB

# # #

NARPM Regional Representatives				
REG	NAME	PHONE	FAX	MAIL CODE
HQ	Matthew Charsky	703-603-8777	703-603-9133	5202G
1	Robert Lim*	617-918-1392	617-918-1291	HBT
1	Byron Mah	617-918-1249	617-918-1294	HBT
2	Damian Duda	212-637-4269	212-637-3966	20 <sup>th</sup> Floor

NARPM Regional Representatives				
REG	NAME	PHONE	FAX	MAIL CODE
2	Betsy Donovan	212-637-4369	212-637-3256	19 <sup>th</sup> Floor
2	Anne Kelly	212-637-4397	212-637-4439	19 <sup>th</sup> Floor
2	Mary Logan	212-637-4321	212-637-4360	18 <sup>th</sup> Floor
2	Monica Mahar	212-637-3942	212-637-4429	19 <sup>th</sup> Floor
CEPD	Ramon Torres	787-729-6951	787-729-7747	
3	Andy Palestini	215-814-3233	215-814-3002	3HS23
4	Robert Pope	404-562-8506	404-562-8518	4WD-FFB
5	Mary Tierney	312-886-4785	312-886-4071	SR-6J
5	Karen Mason-Smith	312-886-6150	312-886-4071	SR-6J
5	Rosita Clarke	312-886-7251	312-886-4071	SR-6J
5	Sharon Jaffess	312-353-0536	312-886-4071	SR-6J
5	Dion Novak	312-886-4737	312-886-4071	SR-6J
6	Rafael Casanova	214-665-7437	214-665-6460	6SF-AP
6	Garyg Miller	214-665-8318	214-665-6460	6SF-AP
7	Daniel Wall	913-551-7710	913-551-7063	SUPR/FFSE
8	Sandra Bourgeois*	303-312-6666	303-312-6067	8EPR-F
8	Frances Costanzi	303-312-6571	303-312-6897	8EPR-SR
8	Erna Waterman	303-312-6762	303-312-6897	8EPR-SR
8	Robert Stites	303-312-6658	303-312-6067	8EPR-F
8-MT	Sara Sparks*	406-782-7415	406-782-3838	8MO
9	Nadia Hollan	415-972-3187	415-947-3526	SFD-8-2
9	David Seter	415-972-3250	415-947-3528	SFD-7-2
9	John Lucey	415-972-3145	415-972-3526	SFD-8-1
9	Lida Tan	415-972-3018	415-972-3520	SFD-8-3
10	Ravi Sanga	206-553-4092	206-553-0124	ECL-111
10	Mike Goldstein	509-376-4919	509-376-2396	HPO

\* Primary Contact in Region

# # #

NARPM Newsletter Contacts				
REG	NAME	PHONE	FAX	MAIL CODE
1	Robert Lim	617-918-1392	617-918-1291	HBT
2		212-637-	212-637-	
CEPD	Ramon Torres	787-729-6951	787-729-7747	
3	Andy Palestini	215-814-3233	215-814-3002	3HS23
4	Nestor Young	404-562-8812	404-562-8788	4WD-NSMB
5	Bernard Schorle*	312-886-4746	312-886-4071	SR-6J
6	Rafael Casanova	214-665-7437	214-665-6460	6SF-AP
7	Daniel Wall	913-551-7710	913-551-7063	SUPRFFSE
8	Eva Hoffman	303-312-6764	303-312-6897	8EPR-SR
8-MT	Sara Sparks	406-782-7415	406-782-3838	8MO
9	Nadia Hollan	415-972-3187	415-947-3526	SFD-8-2
10	Ellie Hale	206-553-1215	206-553-0124	ECL-115
HQ	Matthew Charsky	703-603-8777	703-603-9133	5202G

\* Newsletter Editor

# # #

NARPM Committees			
COMMITTEE	COMMITTEE CHAIR	PHONE	MAIL CODE
Policy & Guidance	Frances Costanzi	303-312-6571	8EPR-SR
Training	Damian Duda	212-637-4269	20 <sup>th</sup> Floor
Conf. Ground Crew			
Bylaws			
Career Development			
Website	David Turner	215-814-3216	3HS22
	Sharon Jaffess	312-886-0536	SR-6J
Outreach			
Reauthorization			

("First names" (and "last names") are given in the forms that are used in e-mail addresses. A name in parenthesis is not a part of the e-mail address.)